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LOWE HAUPTMAN HAM & BERNER, LLP
1700 DIAGONAL ROAD
SUITE 300
ALEXANDRIA, VA 22314

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MCCLELLAND, KIMBERLY KEIL	
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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/705,228
Filing Date: November 12, 2003
Appellant(s): YAMAMOTO ET AL.

Benjamin J. Hauptman
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 11/11/08 appealing from the Office action mailed 5/13/08.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows:

NEW GROUND(S) OF REJECTION

Dependent claim 16-18 have been rejected under 35 U.S.C. 103 (a) over U.S. Patent No. 5,525,173 to Blenke et al. in view of U.S. Patent No. 6,505,791 to Syndikus et al., U.S. Patent No. 6,123,882 to Uchida et al., U.S. Patent No. 6,895,835 to Cordeiro, U.S. Patent No. 5,660,664 to Herrmann.

Claims 16-18 have also been rejected under 35 U.S.C. over U.S. Patent No. 5,525,173 to Blenke et al. in view of U.S. Patent No. 6,505,791 to Syndikus et al., U.S. Patent No. 6,106,944 to Heikkila et al., U.S. Patent No. 6,895,835 to Cordeiro and U.S. Patent No. 5,660,664 to Herrmann.

The remaining statements regarding the grounds of rejection of claims 1-3, 6-7, 9-10, 12-15, 19, 22-23, and 25-27 are accurate.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,525,175	BLENKE et al.	6-1996
6,505,791	SYNDIKUS et al.	1-2003
6,123,882	UCHIDA et al.	9-2000
6,895,835	CORDEIRO	5-2005
5,660,664	HERRMANN	8-1997
6,106,944	HEIKKILA et al.	8-2000
6,574,520	LIU et al.	6-2003

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The grounds of rejection of dependent claims 16-18 have been changed to reflect the dependency of claims 16-18 on independent claim 1. Dependent claim 16-18 have been newly rejected under the same grounds previously applied to independent claim 1. Dependent claim 16-18 have been rejected under 35 U.S.C. 103 (a) over U.S. Patent No. 5,525,173 to Blenke et al. in view of U.S. Patent No. 6,505,791 to Syndikus et al., U.S. Patent No. 6,123,882 to Uchida et al., U.S. Patent No. 6,895,835 to Cordeiro, and U.S. Patent No. 5,660,664 to Herrmann. Claims 16-18 have also been rejected under 35 U.S.C. over U.S. Patent No. 5,525,173 to Blenke et al. in view of U.S. Patent No. 6,505,791 to Syndikus et al., U.S. Patent No. 6,106,944 to Heikkila et al., U.S. Patent No. 6,895,835 to Cordeiro and U.S. Patent No. 5,660,664 to Herrmann.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 9, 11, 13, 15, 19, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,525,173 to Blenke et al. in view of U.S. Patent No. 6,505,791 to Syndikus et al., U.S. Patent No. 6,123,882 to Uchida et al., and U.S. Patent No. 6,895,835 to Cordeiro.

As to claim 9, Blenke et al. discloses a servomotor is used as said motor (column 8, lines 41-45).

As to claim 11, Blenke et al. discloses an apparatus for applying curved elastic to a moving web, including an arm being adapted to swing around the rotary shaft as the rotary shaft rotates (column 8, lines 50-52). However, Blenke et al. does not specifically disclose the materials used to make the arm.

Uchida et al. discloses a thermoplastic article, including structural members of a composite material comprising any one selected from the group consisting of carbon fiber, glass fiber, metallic fiber, synthetic fiber, semi-synthetic fiber and natural fiber and any one selected from the group consisting of thermoplastic synthetic resin and thermosetting synthetic resin (column 1, lines 12-31; column 10, lines 56-67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Uchida's teaching of a composite material for the material composition of the swinging arm disclosed by Blenke et al. The motivation would have been to use a material with strength rigidity, a high elastic modulus in a high-speed manufacturing apparatus (column 1, lines 12-31).

As to claim 13, Blenke et al. discloses said elastic members (22) are directed from said guide means (44) to said nip between said pair of press rolls (70/72) so that said elastic

members coincide with a tangential line with respect to a region in which said pair of press rolls substantially contact each other (See Figure 2A).

As to claim 15, Blenke et al. discloses an apparatus for applying curved elastic to a moving web, including a pair of press rolls (70/72) substantially contacting each other, said press rolls (70/72) rotating in said machine direction around respective axes extending in said cross direction so as to feed said web (24) in said machine direction, and a guiding mechanism (44) located upstream of said pair of said press rolls (70/72) as viewed in said machine direction to oscillate said elastic members (22) in said cross direction; wherein said guide mechanism (44) comprises; a motor (82) having a rotary shaft (47) extending in a direction crossing said axes arid adapted to repeatedly reverse a rotational direction (column 8, lines 50-52); an arm connected with said rotary shaft and extending in a direction crossing said rotary shaft, said arm being formed on its distal end with said guiding element(44) through which at least one of said elastic members (22) is passable, and said arm being adapted to swing around said rotary shaft as said rotary shaft rotates; and at least one feed member (34) located upstream of said rotary shaft (47) as viewed in said machine direction and adapted to direct said elastic members toward said guiding element (44); wherein an axis of said rotary shaft including press rolls (70/72) perpendicular to the guiding mechanism (44/46; See Figures 1-2A). Blenke et al. does not specifically disclose an arm connected directly with said rotary shaft or the rotary shaft is stationary relative to the axes of said press rolls or the materials used to make the arm.

Syndikus et al. discloses a thread traversing device, including it is known in the art of filament traversing devices to use a motor (8) having a rotary shaft (9) extending in a direction crossing said axes and adapted to repeat reversal of its rotational direction (See Figure 2); an arm (7) connected directly with said rotary shaft (9) and extending in a direction crossing said rotary shaft (9), said arm being formed on its distal end with guide means adapted for passage (15) of said elastic members, and said arm being adapted to swing around said rotary shaft as said rotary shaft rotates. It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the directly attached arm taught by Syndikus for the pivoting means disclosed by Blenke et al. The motivation would have been to provide better control over the oscillating movement of the guide means. Syndikus et al. discloses a thread traversing device, including it is known in the art of filament traversing devices with said rotary shaft (9) is stationary relative to the axes of said press rolls (See Figure 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the directly connecting arm taught by Syndikus for the pivoting means disclosed by Blenke et al. The motivation would have been to provide better control over the oscillating movement of the guide means.

Uchida et al. discloses a method of using thermoplastic, including structural members of a composite material comprising any one selected from the group consisting of carbon fiber, glass fiber, metallic fiber, synthetic fiber, semi-synthetic fiber and natural fiber and any one selected from the group consisting of thermoplastic synthetic resin and thermosetting synthetic resin (column 1, lines 12-31; column 10, lines 56-67). It would

have been obvious to one of ordinary skill in the art at the time the invention was made to use Uchida's teaching of a composite material for the material composition of the swinging arm disclosed by Blenke et al. The motivation would have been to use a material with strength rigidity, a high elastic modulus during high-speed manufacturing processes (column 1, lines 12-31).

Cordeiro discloses motor performance, including conventional servomotors are known in the art to have an angular acceleration of up to 15,000 rad/sec² (See Table 1). It would have been obvious to one of ordinary skill in the art to use a conventional servomotor with an angular acceleration of up to 15,000 rad/sec² as taught by Cordeiro for the servomotor of Blenke et al. The motivation would have been to use a servomotor capable of creating the desired elastic member oscillations.

Blenke et al. discloses an apparatus for applying curved elastic to a moving web, including an arm being adapted to swing around the rotary shaft as the rotary shaft rotates (column 8, lines 50-52). However, Blenke et al. does not specifically disclose the materials used to make the arm. It would have been obvious to one having ordinary skill in the art to have determined the optimum value of cause effective variables such as specific gravity and bending modulus through routine experimentation in the absence of a showing of criticality. *In re Woodruff*, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990). However, even though applicant's modification results in great improvement and utility over the prior art, it may still not be patentable if the modification was within the capabilities of one skilled in the art. In re Sola, 22 CCPA (Patents) 1313, 77 F.2d 627, 25 USPQ 433; In re Normann et al., 32 CCPA (Patents) 1248, 150 F.2d 627, 66 USPQ

308; In re Irmscher, 32 CCPA (Patents) 1259, 150 F.2d 705, 66 USPQ 314. More particularly, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In re Swain et al., 33 CCPA (Patents) 1250, 156 F.2d 239, 70 USPQ 412; Minnesota Mining and Mfg. Co. v. Coe, 69 App. D.C. 217, 99 F.2d 986, 38 USPQ 213; Allen et al. v. Coe, 77 App. D.C. 324, 135 F.2d 11, 57 USPQ 136.

As to claim 19, Blenke et al. does not specifically disclose a rotational axis about which the arm swings coincides with a rotational axis of the rotary shaft.

Syndikus et al. discloses a thread traversing device, including it is known in the art of filament traversing to use a rotational axis about which the arm swings coincides with a rotational axis of the rotary shaft (See Figure 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the directly connecting arm taught by Syndikus for the pivoting means disclosed by Blenke et al. The motivation would have been to provide better control over the oscillating movement of the guide means.

As to claim 22, Blenke et al. discloses an apparatus for applying curved elastic to a moving web, including an arm being adapted to swing around the rotary shaft as the rotary shaft rotates (column 8, lines 50-52). However, Blenke et al. does not specifically disclose the materials used to make the arm. It would have been obvious to one having ordinary skill in the art to have determined the optimum value of cause effective variables such as arm weight and length through routine experimentation in the absence of a showing of criticality. *In re Woodruff*, 16 USPQ2d 1934, 1936 (Fed. Cir.

1990). However, even though applicant's modification results in great improvement and utility over the prior art, it may still not be patentable if the modification was within the capabilities of one skilled in the art. In re Sola, 22 CCPA (Patents) 1313, 77 F.2d 627, 25 USPQ 433; In re Normann et al., 32 CCPA (Patents) 1248, 150 F.2d 627, 66 USPQ 308; In re Irmscher, 32 CCPA (Patents) 1259, 150 F.2d 705, 66 USPQ 314. More particularly, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In re Swain et al., 33 CCPA (Patents) 1250, 156 F.2d 239, 70 USPQ 412; Minnesota Mining and Mfg. Co. v. Coe, 69 App. D.C. 217, 99 F.2d 986, 38 USPQ 213; Allen et al. v. Coe, 77 App. D.C. 324, 135 F.2d 11, 57 USPQ 136.

NEW GROUND(S) OF REJECTION

The grounds of rejection of dependent claims 16-18 have been changed to reflect the dependency of claims 16-18 on independent claim 1. Dependent claim 16-18 have been newly rejected under the same grounds previously applied to independent claim 1. Dependent claim 16-18 have been rejected under 35 U.S.C. 103 (a) over U.S. Patent No. 5,525,173 to Blenke et al. in view of U.S. Patent No. 6,505,791 to Syndikus et al., U.S. Patent No. 6,123,882 to Uchida et al., U.S. Patent No. 6,895,835 to Cordeiro, and U.S. Patent No. 5,660,664 to Herrmann.

Claims 1-2, 4, 6-7, 12, 14, 16-18, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,525,173 to Blenke et al. in view of U.S. Patent No.

6,505,791 to Syndikus et al., U.S. Patent No. 6,123,882 to Uchida et al., and U.S. Patent No. 6,895,835 to Cordeiro as applied to claims 9, 11, 13, 15, 19, and 22 above, and further in view of U.S. Patent No. 5,660,664 to Herrmann.

With respect to claim 1, Blenke et al. discloses a method of applying curved elastic to a moving web, including feeding at least a single continuous web (24) in a machine direction as a component member of a disposable wearing article being continuously manufactured, feeding continuous elastic members (22) toward at least one surface of said web while said continuous elastic members are oscillated in a cross direction relative to said machine direction (See Figure 1), and attaching said continuous elastic members in a stretched state (column 9, lines 31-33) to said one surface in a accordance with a desired layout, wherein: in the step of feeding said web, the web is fed to a nip between a pair of press rolls (70/72) substantially being in contact with each other and adapted to rotate in said machine direction around respective axes extending parallel to each other in said cross direction; in the step of feeding said elastic members, the elastic members (22) are fed from upstream of said pair of press rolls (70/72) to the nip between said press rolls (70/72) via guide means (44) adapted to oscillate said elastic members (22) in said cross direction, and in the step of attaching said elastic members, said elastic members (22) are attached to said web (24) by means of an adhesive (62); wherein each of said guide means comprises: a motor (82) having a rotary shaft (47) extending in a direction crossing said axes and adapted to repeat reversal of its rotational direction (column 8, lines 50-52); an arm connected with said rotary shaft and extending in a direction crossing said rotary shaft (47), said arm

being formed on its distal end with guide means adapted for passage (44) of said elastic members (22), and said arm being adapted to swing around said rotary shaft as said rotary shaft rotates; and at least one feed member (34) located upstream of said rotary shaft as viewed in said machine direction and adapted to direct said elastic members toward said guide means (44); and wherein, in the course of running from said feed member to said pair of press rolls via said guide means, said elastic members are attached to said web while said elastic members are oscillated in said cross direction by said arm connected with said rotary shaft so as to repeat reversal of its swinging direction; said process further comprising arranging said axes of said pair of press rolls (70/ 72) vertically, said rotary shaft (47) of said motor (82) extends in a horizontal direction and said arm extends in said vertical plane from said rotary shaft toward said nip between said pair of press rolls (See Figures 1-2A; column 8, lines 50-52). Blenke et al. discloses a servomotor is used as said motor (column 8, lines 41-45). However, Blenke et al. does not specifically disclose the angular rate of acceleration of the arm. Blenke et al. does not specifically disclose an arm connected directly with said rotary shaft or the materials used to make the arm.

Syndikus et al. discloses a thread traversing device, including it is known in the art of filament traversing devices to use a motor (8) having a rotary shaft (9) extending in a direction crossing said axes and adapted to repeat reversal of its rotational direction (See Figure 2); an arm (7) connected directly with said rotary shaft (9) and extending in a direction crossing said rotary shaft (9), said arm being formed on its distal end with guide means adapted for passage (15) of said elastic members, and said arm being

adapted to swing around said rotary shaft as said rotary shaft rotates. It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the directly attached arm taught by Syndikus for the pivoting means disclosed by Blenke et al. The motivation would have been to provide better control over the oscillating movement of the guide means.

Hermann discloses a machine for applying elastic, including arranging said axes of said press rolls horizontally (29/32a), said rotary shaft of said motor vertically (65), and said arm to extend horizontally (50/52) from said rotary shaft toward said nip between said press rolls (See Figures 1-2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to rearrange the apparatus of Blenke et al. by rotating the current orientation 90°, such that the axes of the press rolls are vertical, the rotary shaft is horizontal, and the arm extends vertically as shown by Hermann. The motivation would have been to allow for the application of elastic at high working speeds (column 1, lines 29-31). In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950) (Claims to a hydraulic power press which read on the prior art except with regard to the position of the starting switch were held unpatentable because shifting the position of the starting switch would not have modified the operation of the device.).

Uchida et al. discloses a method of using thermoplastic, including structural members of a composite material comprising any one selected from the group consisting of carbon fiber, glass fiber, metallic fiber, synthetic fiber, semi-synthetic fiber and natural fiber and any one selected from the group consisting of thermoplastic synthetic resin and thermosetting synthetic resin (column 1, lines 12-31; column 10, lines 56-67). It would

have been obvious to one of ordinary skill in the art at the time the invention was made to use Uchida's teaching of a composite material for the material composition of the swinging arm disclosed by Blenke et al. The motivation would have been to use a material with strength rigidity, a high elastic modulus during high-speed manufacturing processes (column 1, lines 12-31).

Cordeiro discloses a method of improving motor performance, including conventional servomotors are known in the art to have an angular acceleration of up to 15,000 rad/sec² (See Table 1). It would have been obvious to one of ordinary skill in the art to use a conventional servomotor with an angular acceleration of up to 15,000 rad/sec² as taught by Cordeiro for the servomotor of Blenke et al. The motivation would have been to use a servomotor capable of creating the desired elastic member oscillations.

Blenke et al. discloses an apparatus for applying curved elastic to a moving web, including an arm being adapted to swing around the rotary shaft as the rotary shaft rotates (column 8, lines 50-52). However, Blenke et al. does not specifically disclose the materials used to make the arm. It would have been obvious to one having ordinary skill in the art to have determined the optimum value of cause effective variables such as specific gravity and bending modulus through routine experimentation in the absence of a showing of criticality. *In re Woodruff*, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990). However, even though applicant's modification results in great improvement and utility over the prior art, it may still not be patentable if the modification was within the capabilities of one skilled in the art. In re Sola, 22 CCPA (Patents) 1313, 77 F.2d 627, 25 USPQ 433; In re Normann et al., 32 CCPA (Patents) 1248, 150 F.2d 627, 66 USPQ

308; In re Irmscher, 32 CCPA (Patents) 1259, 150 F.2d 705, 66 USPQ 314. More particularly, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In re Swain et al., 33 CCPA (Patents) 1250, 156 F.2d 239, 70 USPQ 412; Minnesota Mining and Mfg. Co. v. Coe, 69 App. D.C. 217, 99 F.2d 986, 38 USPQ 213; Allen et al. v. Coe, 77 App. D.C. 324, 135 F.2d 11, 57 USPQ 136.

As to claim 2, Blenke et al. discloses a servomotor is used as said motor (column 8, lines 41-45).

As to claim 4, Blenke et al. discloses an apparatus for applying curved elastic to a moving web, including an arm being adapted to swing around the rotary shaft as the rotary shaft rotates (column 8, lines 50-52). However, Blenke et al. does not specifically disclose the materials used to make the arm.

Uchida et al. discloses a thermoplastic article, including structural members of a composite material comprising any one selected from the group consisting of carbon fiber, glass fiber, metallic fiber, synthetic fiber, semi-synthetic fiber and natural fiber and any one selected from the group consisting of thermoplastic synthetic resin and thermosetting synthetic resin (column 1, lines 12-31; column 10, lines 56-67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Uchida's teaching of a composite material for the material composition of the swinging arm disclosed by Blenke et al. The motivation would have been to use a material with strength rigidity, a high elastic modulus in a high-speed manufacturing apparatus (column 1, lines 12-31).

As to claim 6, Blenke et al. discloses said elastic members (22) are directed from said guide means (44) to said nip between said pair of press rolls (70/72) so that said elastic members are positioned in a plane a tangential to said press rolls in a region in which said press rolls substantially contact each other (See Figure 2A).

As to claim 7, Blenke et al. discloses said elastic members extend from said feed member to said guide means at a deviation angle of 10° or less relative to said vertical plane defined by the parallel axes of the press rolls (See Figure 2A).

Hermann discloses a machine for applying elastic, including arranging said axes of said press rolls horizontally (29/32a), said rotary shaft of said motor vertically (65), and said arm to extend horizontally (50/52) from said rotary shaft toward said nip between said press rolls (See Figures 1-2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to rearrange the apparatus of Blenke et al. by rotating the current orientation 90º, such that the axes of the press rolls are vertical, the rotary shaft is horizontal, and the arm extends vertically as shown by Hermann. The motivation would have been to allow for the application of elastic at high working speeds (column 1, lines 29-31). In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950) (Claims to a hydraulic power press which read on the prior art except with regard to the position of the starting switch were held unpatentable because shifting the position of the starting switch would not have modified the operation of the device.).

As to claim 12, Blenke et al. discloses said axes of said pair of press rolls (70/ 72) extend in a vertical plane, said rotary shaft (47) of said motor (82) extends in a

horizontal plane and said arm extends in said vertical direction front said rotary shaft toward said nip between said pair of press rolls (See Figure 2A).

Hermann discloses a machine for applying elastic, including said axes of said press rolls extend horizontally (29/32a), said rotary shaft of said motor extends vertically (65), and said arm to extends horizontally (50/52) from said rotary shaft toward said nip between said press rolls (See Figures 1-2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to rearrange the apparatus of Blenke et al. by rotating the current orientation 90º, such that the axes of the press rolls are vertical, the rotary shaft is horizontal, and the arm extends vertically as shown by Hermann. The motivation would have been to allow for the application of elastic at high working speeds (column 1, lines 29-31). In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950) (Claims to a hydraulic power press which read on the prior art except with regard to the position of the starting switch were held unpatentable because shifting the position of the starting switch would not have modified the operation of the device.).

As to claim 14, Blenke et al. discloses said elastic members extend from said feed member to said guide means at a deviation angle of 10° or less relative to said vertical direction (See Figure 2A).

Hermann discloses a machine for applying elastic, including arranging said axes of said press rolls horizontally (29/32a), said rotary shaft of said motor vertically (65), and said arm to extend horizontally (50/52) from said rotary shaft toward said nip between said press rolls (See Figures 1-2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to rearrange the apparatus of Blenke et al. by

rotating the current orientation 90º, such that the axes of the press rolls are vertical, the rotary shaft is horizontal, and the arm extends vertically as shown by Hermann. The motivation would have been to allow for the application of elastic at high working speeds (column 1, lines 29-31). In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950) (Claims to a hydraulic power press which read on the prior art except with regard to the position of the starting switch were held unpatentable because shifting the position of the starting switch would not have modified the operation of the device.).

As to claim 16, Blenke et al. discloses a method of applying curved elastic to a moving web, including press rolls (70/72) with the elastic members are being fed and oscillated at the same time towards said nip (See Figure 2). . However, Blenke et al. does not specifically disclose maintaining an axis of said rotary shaft stationary relative to the axes of said press rolls while the elastic members are being fed and oscillated at the same time towards said nip.

Syndikus et al. discloses a thread traversing device, including it is known in the art of filament traversing to maintain an axis of said rotary shaft (9) stationary relative to the axes of said press rolls (See Figure 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the directly connecting arm taught by Syndikus for the pivoting means disclosed by Blenke et al. The motivation would have been to provide better control over the oscillating movement of the guide means.

As to claim 17, Blenke et al. discloses said elastic members (22) are attached to said web by means of the adhesive only (column 4, lines 49-53) in regions corresponding to

leg openings of the disposable wearing article being manufactured (column 9, line 56-column 10, line 5); said method further comprising cutting the elastic members between said regions so that the cut elastic members do not extend across an entire width of the disposable wearing article being manufactured (column 10, lines 25-28), and attaching an absorbent core to said web, wherein portions of the cut elastic members that have not been attached to said web contract to a relaxed state and are located near transverse edges of the absorbent core (column 11, lines 41-56).

As to claim 18, Blenke et al. discloses controlling rotational oscillating movements of the arm of each said guide means such that at least one of (i) the desired layout and (ii) a stretching ratio of the elastic members fed by one guide means is different from that of the elastic members fed by the other guide means (column 4, lines 2-4).

As to claim 23, Blenke et al. discloses an apparatus for applying curved elastic to a moving web, including an arm being adapted to swing around the rotary shaft as the rotary shaft rotates (column 8, lines 50-52). However, Blenke et al. does not specifically disclose the materials used to make the arm. It would have been obvious to one having ordinary skill in the art to have determined the optimum value of cause effective variables such as arm weight and length through routine experimentation in the absence of a showing of criticality. *In re Woodruff*, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990). However, even though applicant's modification results in great improvement and utility over the prior art, it may still not be patentable if the modification was within the capabilities of one skilled in the art. In re Sola, 22 CCPA (Patents) 1313, 77 F.2d 627, 25 USPQ 433; In re Normann et al., 32 CCPA (Patents) 1248, 150 F.2d 627, 66 USPQ

308; In re Irmscher, 32 CCPA (Patents) 1259, 150 F.2d 705, 66 USPQ 314. More particularly, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In re Swain et al., 33 CCPA (Patents) 1250, 156 F.2d 239, 70 USPQ 412; Minnesota Mining and Mfg. Co. v. Coe, 69 App. D.C. 217, 99 F.2d 986, 38 USPQ 213; Allen et al. v. Coe, 77 App. D.C. 324, 135 F.2d 11, 57 USPQ 136.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,525,173 to Blenke et al. in view of U.S. Patent No. 6,505,791 to Syndikus et al., U.S. Patent No. 6,123,882 to Uchida et al., U.S. Patent No. 6,895,835 to Cordeiro , and U.S. Patent No. 5,660,664 to Herrmann as applied to claims 1-2, 4, 6-7, 12, 14, 16-18, and 23 above, and further in view of U.S. Patent No. 6,574,520 to Liu et al.

With respect to claim 3, Blenke et al. discloses a method of applying curved elastic to a moving web, including a servomotor (82) is used to rotate the rotary shaft (47; column 8, lines 50-52). However, Blenke et al. does not specifically disclose said servomotor is actuated by a controller containing therein a program adapted to rotate said servomotor on the basis of a running speed of at least said web in said machine direction and said layout desired for said elastic members.

Liu et al. discloses a method of manufacturing absorbent articles, including using servomotors actuated by a controller containing therein a program adapted to rotate said servomotor on the basis of a running speed of at least said web in said machine direction and said layout desired for said elastic members (column 15, lines 11-25). It

would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the program taught by Liu et al. with the servomotor in the method of applying curved elastic to a moving web disclosed by Blenke et al. The motivation would have been to improve accuracy, synchronization, and flexibility of production of the articles (column 15, lines 11-25). It is well settled that it is not inventive to broadly provide a mechanical or automatic means to replace a manual activity which has accomplished the same results. *In re Venner and Bowser* 120 USPQ192.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,525,173 to Blenke et al. in view of U.S. Patent No. 6,505,791 to Syndikus et al., U.S. Patent No. 6,895,835 to Cordeiro, and U.S. Patent No. 6,123,882 to Uchida et al. as applied to claims 9, 11, 13, 15, 19, and 22 above, and further in view of U.S. Patent No. 6,574,520 to Liu et al.

As to claim 10, Blenke et al. discloses an apparatus for applying curved elastic to a moving web, including a servomotor (82) is used to rotate the rotary shaft (47; column 8, lines 50-52). However, Blenke et al. does not specifically disclose said servomotor is actuated by a controller containing therein a program adapted to rotate said servomotor on the basis of a running speed of at least said web in said machine direction and said layout desired for said elastic members.

Liu et al. discloses an apparatus for manufacturing absorbent articles, including using servomotors actuated by a controller containing therein a program adapted to rotate said servomotor on the basis of a running speed of at least said web in said machine

direction and said layout desired for said elastic members (column 15, lines 11-25). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the program taught by Liu et al. with the servomotor in the apparatus for applying curved elastic to a moving web disclosed by Blenke et al. The motivation would have been to improve accuracy, synchronization, and flexibility of production of the articles (column 15, lines 11-25). It is well settled that it is not inventive to broadly provide a mechanical or automatic means to replace a manual activity which has accomplished the same results. *In re Venner and Bowser* 120 USPQ192.

Claims 9, 11, 13, 15, 19, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,525,173 to Blenke et al. in view of U.S. Patent No. 6,505,791 to Syndikus et al., U.S. Patent No. 6,106,944 to Heikkila et al., and U.S. Patent No. 6,895,835 to Cordeiro.

As to claim 9, Blenke et al. discloses a servomotor is used as said motor (column 8, lines 41-45).

As to claim 11, Blenke et al. discloses an apparatus for applying curved elastic to a moving web, including an arm being adapted to swing around the rotary shaft as the rotary shaft rotates (column 8, lines 50-52). However, Blenke et al. does not specifically disclose the materials used to make the arm.

Heikkila et al. discloses a structural member, including structural members of a composite material comprising any one selected from the group consisting of carbon fiber, glass fiber, metallic fiber, synthetic fiber, semi-synthetic fiber and natural fiber and

any one selected from the group consisting of thermoplastic synthetic resin and thermosetting synthetic resin (column 1, lines 10-28; column 6, lines 1-9). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Heikkila's teaching of a composite material for the material composition of the swinging arm disclosed by Blenke et al. The motivation would have been to use a material with increased strength in a high-speed manufacturing apparatus (column 1, lines 26-28).

As to claim 13, Blenke et al. discloses said elastic members (22) are directed from said guide means (44) to said nip between said pair of press rolls (70/72) so that said elastic members coincide with a tangential line with respect to a region in which said pair of press rolls substantially contact each other (See Figure 2A).

As to claim 15, Blenke et al. discloses an apparatus for applying curved elastic to a moving web, including a pair of press rolls (70/72) substantially contacting each other, said press rolls (70/72) rotating in said machine direction around respective axes extending in said cross direction so as to feed said web (24) in said machine direction, and a guiding mechanism (44) located upstream of said pair of said press rolls (70/72) as viewed in said machine direction to oscillate said elastic members (22) in said cross direction; wherein said guide mechanism (44) comprises; a motor (82) having a rotary shaft (47) extending in a direction crossing said axes arid adapted to repeatedly reverse a rotational direction (column 8, lines 50-52); an arm connected with said rotary shaft and extending in a direction crossing said rotary shaft, said arm being formed on its distal end with said guiding element(44) through which at least one of said elastic members (22) is passable, and said arm being adapted to swing around said rotary

shaft as said rotary shaft rotates; and at least one feed member (34) located upstream of said rotary shaft (47) as viewed in said machine direction and adapted to direct said elastic members toward said guiding element (44); wherein an axis of said rotary shaft including press rolls (70/72) perpendicular to the guiding mechanism (44/46; See Figures 1-2A). Blenke et al. does not specifically disclose an arm connected directly with said rotary shaft or the rotary shaft is stationary relative to the axes of said press rolls or the materials used to make the arm.

Syndikus et al. discloses a thread traversing device, including it is known in the art of filament traversing devices to use a motor (8) having a rotary shaft (9) extending in a direction crossing said axes and adapted to repeat reversal of its rotational direction (See Figure 2); an arm (7) connected directly with said rotary shaft (9) and extending in a direction crossing said rotary shaft (9), said arm being formed on its distal end with guide means adapted for passage (15) of said elastic members, and said arm being adapted to swing around said rotary shaft as said rotary shaft rotates. It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the directly attached arm taught by Syndikus for the pivoting means disclosed by Blenke et al. The motivation would have been to provide better control over the oscillating movement of the guide means. Syndikus et al. discloses a thread traversing device, including it is known in the art of filament traversing devices with said rotary shaft (9) is stationary relative to the axes of said press rolls (See Figure 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the directly connecting arm taught by Syndikus for the pivoting means

disclosed by Blenke et al. The motivation would have been to provide better control over the oscillating movement of the guide means.

Heikkila et al. discloses a structural member, including structural members of a composite material comprising any one selected from the group consisting of carbon fiber, glass fiber, metallic fiber, synthetic fiber, semi-synthetic fiber and natural fiber and any one selected from the group consisting of thermoplastic synthetic resin and thermosetting synthetic resin (column 1, lines 10-28; column 6, lines 1-9). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Heikkila's teaching of a composite material for the material composition of the swinging arm disclosed by Blenke et al. The motivation would have been to use a material with increased strength in a high-speed manufacturing apparatus (column 1, lines 26-28).

Cordeiro discloses motor performance, including conventional servomotors are known in the art to have an angular acceleration of up to 15,000 rad/sec² (See Table 1). It would have been obvious to one of ordinary skill in the art to use a conventional servomotor with an angular acceleration of up to 15,000 rad/sec² as taught by Cordeiro for the servomotor of Blenke et al. The motivation would have been to use a servomotor capable of creating the desired elastic member oscillations.

Blenke et al. discloses an apparatus for applying curved elastic to a moving web, including an arm being adapted to swing around the rotary shaft as the rotary shaft rotates (column 8, lines 50-52). However, Blenke et al. does not specifically disclose the materials used to make the arm. It would have been obvious to one having ordinary skill in the art to have determined the optimum value of cause effective variables such

as specific gravity and bending modulus through routine experimentation in the absence of a showing of criticality. *In re Woodruff*, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990). However, even though applicant's modification results in great improvement and utility over the prior art, it may still not be patentable if the modification was within the capabilities of one skilled in the art. In re Sola, 22 CCPA (Patents) 1313, 77 F.2d 627, 25 USPQ 433; In re Normann et al., 32 CCPA (Patents) 1248, 150 F.2d 627, 66 USPQ 308; In re Irmscher, 32 CCPA (Patents) 1259, 150 F.2d 705, 66 USPQ 314. More particularly, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In re Swain et al., 33 CCPA (Patents) 1250, 156 F.2d 239, 70 USPQ 412; Minnesota Mining and Mfg. Co. v. Coe, 69 App. D.C. 217, 99 F.2d 986, 38 USPQ 213; Allen et al. v. Coe, 77 App. D.C. 324, 135 F.2d 11, 57 USPQ 136.

As to claim 19, Blenke et al. does not specifically disclose a rotational axis about which the arm swings coincides with a rotational axis of the rotary shaft.

Syndikus et al. discloses a thread traversing device, including it is known in the art of filament traversing to use a rotational axis about which the arm swings coincides with a rotational axis of the rotary shaft (See Figure 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the directly connecting arm taught by Syndikus for the pivoting means disclosed by Blenke et al. The motivation would have been to provide better control over the oscillating movement of the guide means.

As to claim 22, Blenke et al. discloses an apparatus for applying curved elastic to a moving web, including an arm being adapted to swing around the rotary shaft as the rotary shaft rotates (column 8, lines 50-52). However, Blenke et al. does not specifically disclose the materials used to make the arm. It would have been obvious to one having ordinary skill in the art to have determined the optimum value of cause effective variables such as arm weight and length through routine experimentation in the absence of a showing of criticality. *In re Woodruff*, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990). However, even though applicant's modification results in great improvement and utility over the prior art, it may still not be patentable if the modification was within the capabilities of one skilled in the art. In re Sola, 22 CCPA (Patents) 1313, 77 F.2d 627, 25 USPQ 433; In re Normann et al., 32 CCPA (Patents) 1248, 150 F.2d 627, 66 USPQ 308; In re Irmscher, 32 CCPA (Patents) 1259, 150 F.2d 705, 66 USPQ 314. More particularly, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In re Swain et al., 33 CCPA (Patents) 1250, 156 F.2d 239, 70 USPQ 412; Minnesota Mining and Mfg. Co. v. Coe, 69 App. D.C. 217, 99 F.2d 986, 38 USPQ 213; Allen et al. v. Coe, 77 App. D.C. 324, 135 F.2d 11, 57 USPQ 136.

As to claim 27, Blenke et al. does not specifically disclose the materials used to make the arm.

Heikkila et al. discloses a structural member, including structural members of a composite material comprising thermosetting synthetic resin (column 1, lines 10-28; column 6, lines 1-9). It would have been obvious to one of ordinary skill in the art at the

time the invention was made to use Heikkila's teaching of a composite material for the material composition of the swinging arm disclosed by Blenke et al. The motivation would have been to use a material with increased strength in a high-speed manufacturing apparatus (column 1, lines 26-28).

NEW GROUND(S) OF REJECTION

The grounds of rejection of dependent claims 16-18 have been changed to reflect the dependency of claims 16-18 on independent claim 1. Dependent claim 16-18 have been newly rejected under the same grounds previously applied to independent claim 1. Dependent claims 16-18 have also been rejected under 35 U.S.C. over U.S. Patent No. 5,525,173 to Blenke et al. in view of U.S. Patent No. 6,505,791 to Syndikus et al., U.S. Patent No. 6,106,944 to Heikkila et al., U.S. Patent No. 6,895,835 to Cordeiro and U.S. Patent No. 5,660,664 to Herrmann.

Claims 1-2, 4, 6-7, 12, 14, 16-18, 23, and 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,525,173 to Blenke et al. in view of U.S. Patent No. 6,505,791 to Syndikus et al., U.S. Patent No. 6,106,944 to Heikkila et al., and U.S. Patent No. 6,895,835 to Cordeiro as applied to claims 9, 11, 13, 15, 19, 22, and 27 above, and further in view of U.S. Patent No. 5,660,664 to Herrmann.
With respect to claim 1, Blenke et al. discloses a method of applying curved elastic to a moving web, including feeding at least a single continuous web (24) in a machine direction as a component member of a disposable wearing article being continuously

manufactured, feeding continuous elastic members (22) toward at least one surface of said web while said continuous elastic members are oscillated in a cross direction relative to said machine direction (See Figure 1), and attaching said continuous elastic members in a stretched state (column 9, lines 31-33) to said one surface in a accordance with a desired layout, wherein: in the step of feeding said web, the web is fed to a nip between a pair of press rolls (70/72) substantially being in contact with each other and adapted to rotate in said machine direction around respective axes extending parallel to each other in said cross direction; in the step of feeding said elastic members, the elastic members (22) are fed from upstream of said pair of press rolls (70/72) to the nip between said press rolls (70/72) via guide means (44) adapted to oscillate said elastic members (22) in said cross direction, and in the step of attaching said elastic members, said elastic members (22) are attached to said web (24) by means of an adhesive (62); wherein each of said guide means comprises: a motor (82) having a rotary shaft (47) extending in a direction crossing said axes and adapted to repeat reversal of its rotational direction (column 8, lines 50-52); an arm connected with said rotary shaft and extending in a direction crossing said rotary shaft (47), said arm being formed on its distal end with guide means adapted for passage (44) of said elastic members (22), and said arm being adapted to swing around said rotary shaft as said rotary shaft rotates; and at least one feed member (34) located upstream of said rotary shaft as viewed in said machine direction and adapted to direct said elastic members toward said guide means (44); and wherein, in the course of running from said feed member to said pair of press rolls via said guide means, said elastic members are

attached to said web while said elastic members are oscillated in said cross direction by said arm connected with said rotary shaft so as to repeat reversal of its swinging direction; said process further comprising arranging said axes of said pair of press rolls (70/ 72) vertically, said rotary shaft (47) of said motor (82) extends in a horizontal direction and said arm extends in said vertical plane from said rotary shaft toward said nip between said pair of press rolls (See Figures 1-2A; column 8, lines 50-52). Blenke et al. discloses a servomotor is used as said motor (column 8, lines 41-45). However, Blenke et al. does not specifically disclose the angular rate of acceleration of the arm. Blenke et al. does not specifically disclose an arm connected directly with said rotary shaft or the materials used to make the arm.

Syndikus et al. discloses a thread traversing device, including it is known in the art of filament traversing devices to use a motor (8) having a rotary shaft (9) extending in a direction crossing said axes and adapted to repeat reversal of its rotational direction (See Figure 2); an arm (7) connected directly with said rotary shaft (9) and extending in a direction crossing said rotary shaft (9), said arm being formed on its distal end with guide means adapted for passage (15) of said elastic members, and said arm being adapted to swing around said rotary shaft as said rotary shaft rotates. It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the directly attached arm taught by Syndikus for the pivoting means disclosed by Blenke et al. The motivation would have been to provide better control over the oscillating movement of the guide means.

Hermann discloses a machine for applying elastic, including arranging said axes of said press rolls horizontally (29/32a), said rotary shaft of said motor vertically (65), and said arm to extend horizontally (50/52) from said rotary shaft toward said nip between said press rolls (See Figures 1-2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to rearrange the apparatus of Blenke et al. by rotating the current orientation 90º, such that the axes of the press rolls are vertical, the rotary shaft is horizontal, and the arm extends vertically as shown by Hermann. The motivation would have been to allow for the application of elastic at high working speeds (column 1, lines 29-31). In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950) (Claims to a hydraulic power press which read on the prior art except with regard to the position of the starting switch were held unpatentable because shifting the position of the starting switch would not have modified the operation of the device.).

Heikkila et al. discloses a structural member, including structural members of a composite material comprising any one selected from the group consisting of carbon fiber, glass fiber, metallic fiber, synthetic fiber, semi-synthetic fiber and natural fiber and any one selected from the group consisting of thermoplastic synthetic resin and thermosetting synthetic resin (column 1, lines 10-28; column 6, lines 1-9). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Heikkila's teaching of a composite material for the material composition of the swinging arm disclosed by Blenke et al. The motivation would have been to use a material with increased strength in a high-speed manufacturing apparatus (column 1, lines 26-28).

Cordeiro discloses a method of improving motor performance, including conventional servomotors are known in the art to have an angular acceleration of up to 15,000 rad/sec² (See Table 1). It would have been obvious to one of ordinary skill in the art to use a conventional servomotor with an angular acceleration of up to 15,000 rad/sec² as taught by Cordeiro for the servomotor of Blenke et al. The motivation would have been to use a servomotor capable of creating the desired elastic member oscillations. Blenke et al. discloses an apparatus for applying curved elastic to a moving web, including an arm being adapted to swing around the rotary shaft as the rotary shaft rotates (column 8, lines 50-52). However, Blenke et al. does not specifically disclose the materials used to make the arm. It would have been obvious to one having ordinary skill in the art to have determined the optimum value of cause effective variables such as specific gravity and bending modulus through routine experimentation in the absence of a showing of criticality. *In re Woodruff*, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990). However, even though applicant's modification results in great improvement and utility over the prior art, it may still not be patentable if the modification was within the capabilities of one skilled in the art. In re Sola, 22 CCPA (Patents) 1313, 77 F.2d 627, 25 USPQ 433; In re Normann et al., 32 CCPA (Patents) 1248, 150 F.2d 627, 66 USPQ 308; In re Irmscher, 32 CCPA (Patents) 1259, 150 F.2d 705, 66 USPQ 314. More particularly, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In re Swain et al., 33 CCPA (Patents) 1250, 156 F.2d 239, 70 USPQ 412; Minnesota

Mining and Mfg. Co. v. Coe, 69 App. D.C. 217, 99 F.2d 986, 38 USPQ 213; Allen et al. v. Coe, 77 App. D.C. 324, 135 F.2d 11, 57 USPQ 136.

As to claim 2, Blenke et al. discloses a servomotor is used as said motor (column 8, lines 41-45).

As to claim 4, Blenke et al. discloses an apparatus for applying curved elastic to a moving web, including an arm being adapted to swing around the rotary shaft as the rotary shaft rotates (column 8, lines 50-52). However, Blenke et al. does not specifically disclose the materials used to make the arm.

Heikkila et al. discloses a structural member, including structural members of a composite material comprising any one selected from the group consisting of carbon fiber, glass fiber, metallic fiber, synthetic fiber, semi-synthetic fiber and natural fiber and any one selected from the group consisting of thermoplastic synthetic resin and thermosetting synthetic resin (column 1, lines 10-28; column 6, lines 1-9). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Heikkila's teaching of a composite material for the material composition of the swinging arm disclosed by Blenke et al. The motivation would have been to use a material with increased strength in a high-speed manufacturing apparatus (column 1, lines 26-28).

As to claim 6, Blenke et al. discloses said elastic members (22) are directed from said guide means (44) to said nip between said pair of press rolls (70/72) so that said elastic members are positioned in a plane a tangential to said press rolls in a region in which said press rolls substantially contact each other (See Figure 2A).

As to claim 7, Blenke et al. discloses said elastic members extend from said feed member to said guide means at a deviation angle of 10° or less relative to said vertical plane defined by the parallel axes of the press rolls (See Figure 2A).

Hermann discloses a machine for applying elastic, including arranging said axes of said press rolls horizontally (29/32a), said rotary shaft of said motor vertically (65), and said arm to extend horizontally (50/52) from said rotary shaft toward said nip between said press rolls (See Figures 1-2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to rearrange the apparatus of Blenke et al. by rotating the current orientation 90º, such that the axes of the press rolls are vertical, the rotary shaft is horizontal, and the arm extends vertically as shown by Hermann. The motivation would have been to allow for the application of elastic at high working speeds (column 1, lines 29-31). In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950) (Claims to a hydraulic power press which read on the prior art except with regard to the position of the starting switch were held unpatentable because shifting the position of the starting switch would not have modified the operation of the device.).

As to claim 12, Blenke et al. discloses said axes of said pair of press rolls (70/ 72) extend in a vertical plane, said rotary shaft (47) of said motor (82) extends in a horizontal plane and said arm extends in said vertical direction front said rotary shaft toward said nip between said pair of press rolls (See Figure 2A).

Hermann discloses a machine for applying elastic, including said axes of said press rolls extend horizontally (29/32a), said rotary shaft of said motor extends vertically (65), and said arm to extends horizontally (50/52) from said rotary shaft toward said nip

between said press rolls (See Figures 1-2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to rearrange the apparatus of Blenke et al. by rotating the current orientation 90º, such that the axes of the press rolls are vertical, the rotary shaft is horizontal, and the arm extends vertically as shown by Hermann. The motivation would have been to allow for the application of elastic at high working speeds (column 1, lines 29-31). In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950) (Claims to a hydraulic power press which read on the prior art except with regard to the position of the starting switch were held unpatentable because shifting the position of the starting switch would not have modified the operation of the device.).

As to claim 14, Blenke et al. discloses said elastic members extend from said feed member to said guide means at a deviation angle of 10° or less relative to said vertical direction (See Figure 2A).

Hermann discloses a machine for applying elastic, including arranging said axes of said press rolls horizontally (29/32a), said rotary shaft of said motor vertically (65), and said arm to extend horizontally (50/52) from said rotary shaft toward said nip between said press rolls (See Figures 1-2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to rearrange the apparatus of Blenke et al. by rotating the current orientation 90º, such that the axes of the press rolls are vertical, the rotary shaft is horizontal, and the arm extends vertically as shown by Hermann. The motivation would have been to allow for the application of elastic at high working speeds (column 1, lines 29-31). In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950) (Claims to a hydraulic power press which read on the prior art except with regard to the

position of the starting switch were held unpatentable because shifting the position of the starting switch would not have modified the operation of the device.).

As to claim 16, Blenke et al. discloses a method of applying curved elastic to a moving web, including press rolls (70/72) with the elastic members are being fed and oscillated at the same time towards said nip (See Figure 2). . However, Blenke et al. does not specifically disclose maintaining an axis of said rotary shaft stationary relative to the axes of said press rolls while the elastic members are being fed and oscillated at the same time towards said nip.

Syndikus et al. discloses a thread traversing device, including it is known in the art of filament traversing to maintain an axis of said rotary shaft (9) stationary relative to the axes of said press rolls (See Figure 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the directly connecting arm taught by Syndikus for the pivoting means disclosed by Blenke et al. The motivation would have been to provide better control over the oscillating movement of the guide means.

As to claim 17, Blenke et al. discloses said elastic members (22) are attached to said web by means of the adhesive only (column 4, lines 49-53) in regions corresponding to leg openings of the disposable wearing article being manufactured (column 9, line 56-column 10, line 5); said method further comprising cutting the elastic members between said regions so that the cut elastic members do not extend across an entire width of the disposable wearing article being manufactured (column 10, lines 25-28), and attaching an absorbent core to said web, wherein portions of the cut elastic members that have

not been attached to said web contract to a relaxed state and are located near transverse edges of the absorbent core (column 11, lines 41-56).

As to claim 18, Blenke et al. discloses controlling rotational oscillating movements of the arm of each said guide means such that at least one of (i) the desired layout and (ii) a stretching ratio of the elastic members fed by one guide means is different from that of the elastic members fed by the other guide means (column 4, lines 2-4).

As to claim 23, Blenke et al. discloses an apparatus for applying curved elastic to a moving web, including an arm being adapted to swing around the rotary shaft as the rotary shaft rotates (column 8, lines 50-52). However, Blenke et al. does not specifically disclose the materials used to make the arm. It would have been obvious to one having ordinary skill in the art to have determined the optimum value of cause effective variables such as arm weight and length through routine experimentation in the absence of a showing of criticality. *In re Woodruff*, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990). However, even though applicant's modification results in great improvement and utility over the prior art, it may still not be patentable if the modification was within the capabilities of one skilled in the art. In re Sola, 22 CCPA (Patents) 1313, 77 F.2d 627, 25 USPQ 433; In re Normann et al., 32 CCPA (Patents) 1248, 150 F.2d 627, 66 USPQ 308; In re Irmscher, 32 CCPA (Patents) 1259, 150 F.2d 705, 66 USPQ 314. More particularly, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In re Swain et al., 33 CCPA (Patents) 1250, 156 F.2d 239, 70 USPQ 412; Minnesota

Mining and Mfg. Co. v. Coe, 69 App. D.C. 217, 99 F.2d 986, 38 USPQ 213; Allen et al. v. Coe, 77 App. D.C. 324, 135 F.2d 11, 57 USPQ 136.

As to claim 25, Blenke et al. does not specifically disclose the rotary shaft is stationary relative to the axes of said press rolls.

Syndikus et al. discloses a thread traversing method, including it is known in the art of filament traversing devices that said rotary shaft (9) is stationary relative to the axes of said press rolls (See Figure 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the directly connecting arm taught by Syndikus for the pivoting means disclosed by Blenke et al. The motivation would have been to provide better control over the oscillating movement of the guide means.

As to claim 26, Blenke et al. does not specifically disclose the materials used to make the arm.

Heikkila et al. discloses a structural member, including structural members of a composite material comprising thermosetting synthetic resin (column 1, lines 10-28; column 6, lines 1-9). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Heikkila's teaching of a composite material for the material composition of the swinging arm disclosed by Blenke et al. The motivation would have been to use a material with increased strength in a high-speed manufacturing apparatus (column 1, lines 26-28).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,525,173 to Blenke et al. in view of U.S. Patent No. 6,505,791 to Syndikus et al., U.S. Patent No. 6,106,944 to Heikkila et al., U.S. Patent No. 5,660,664 to Herrmann, and U.S. Patent No. 6,895,835 to Cordeiro as applied to claims 1-2, 4, 6-7, 12, 14, 16-18, 23, and 25-26 above, and further in view of U.S. Patent No. 6,574,520 to Liu et al.

With respect to claim 3, Blenke et al. discloses a method of applying curved elastic to a moving web, including a servomotor (82) is used to rotate the rotary shaft (47; column 8, lines 50-52). However, Blenke et al. does not specifically disclose said servomotor is actuated by a controller containing therein a program adapted to rotate said servomotor on the basis of a running speed of at least said web in said machine direction and said layout desired for said elastic members.

Liu et al. discloses a method of manufacturing absorbent articles, including using servomotors actuated by a controller containing therein a program adapted to rotate said servomotor on the basis of a running speed of at least said web in said machine direction and said layout desired for said elastic members (column 15, lines 11-25). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the program taught by Liu et al. with the servomotor in the method of applying curved elastic to a moving web disclosed by Blenke et al. The motivation would have been to improve accuracy, synchronization, and flexibility of production of the articles (column 15, lines 11-25). It is well settled that it is not inventive to broadly provide a mechanical or automatic means to replace a manual activity which has accomplished the same results. *In re Venner and Bowser* 120 USPQ192.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,525,173 to Blenke et al. in view of U.S. Patent No. 6,505,791 to Syndikus et al., U.S. Patent No. 6,106,944 to Heikkila et al., and U.S. Patent No. 6,895,835 to Cordeiro as applied to claims 9, 11, 13, 15, 19, 22, and 27 above, and further in view of U.S. Patent No. 6,574,520 to Liu et al.

As to claim 10, Blenke et al. discloses an apparatus for applying curved elastic to a moving web, including a servomotor (82) is used to rotate the rotary shaft (47; column 8, lines 50-52). However, Blenke et al. does not specifically disclose said servomotor is actuated by a controller containing therein a program adapted to rotate said servomotor on the basis of a running speed of at least said web in said machine direction and said layout desired for said elastic members.

Liu et al. discloses an apparatus for manufacturing absorbent articles, including using servomotors actuated by a controller containing therein a program adapted to rotate said servomotor on the basis of a running speed of at least said web in said machine direction and said layout desired for said elastic members (column 15, lines 11-25). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the program taught by Liu et al. with the servomotor in the apparatus for applying curved elastic to a moving web disclosed by Blenke et al. The motivation would have been to improve accuracy, synchronization, and flexibility of production of the articles (column 15, lines 11-25). It is well settled that it is not inventive to broadly

provide a mechanical or automatic means to replace a manual activity which has accomplished the same results. *In re Venner and Bowser* 120 USPQ192.

(10) Response to Argument

Appellant's arguments filed 11/11/08 have been fully considered but they are not persuasive.

First Ground of Rejection:

In response to applicant's argument that it would not have been obvious to further modify the combination of Blenke and Syndikus, this argument is not persuasive. The phrase "It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the directly connecting arm taught by Syndikus for the pivoting means disclosed by Blenke et al. The motivation would have been to provide better control over the oscillating movement of the guide means." cited by applicant does not suggest further modification of the combination, but instead provides additional feature of Syndikus which would be obvious to combine with the invention of Blenke. Syndikus' disclosure of stationary axes of the press rolls relative to the rotary shaft when combined with Blenke does not eliminate the sliding capability of the arm of Blenke. Instead, substituting the directly connected arm of Syndikus for the pivoting means of Blenke would result in arm 42/44 directly connected to the rotary shaft of the servomotor (82) such that the rotary shaft is stationary relative to the axes of the press rolls, similar to the drawings in Syndikus in Figures 1 and 2. The described combination does not eliminate a sliding capability of Blenke, and improves control of the thread

guide means by providing a direct connection between driving means (82) and thread guide means (42/44), and therefore would result in improved control during oscillations.

In response to applicant's argument that Blenke teaches away from a combination with Syndikus, this argument is not persuasive.

Applicant argues Blenke specifically teaches away from oscillations of great magnitude, disclosed by Syndikus. This argument is not persuasive because nothing in Syndikus suggests oscillations of great magnitude. Syndikus discloses a fixed arm, but does not recite a large swinging magnitude. Contrary to applicant's assertion, Syndikus does not appear to disclose a "long" arm anywhere in the current reference. Syndikus is drawn to traversing thread on a bobbin. It is unclear how any oscillations on a bobbin may be regarded as of "great magnitude". Furthermore, the scale of oscillations as being "large" or "small" is completely relative and depends on the length and speed of arm movement. Therefore, such a feature cannot be inherent to Syndikus. Consequently, no evidence of teaching away could be found in either Syndikus or Blenke. Therefore, the combination remains desirable for one of ordinary skill in the art.

In response to applicant's argument that specific gravity and bending modulus of a material are not art recognized result effective variables, this argument is not persuasive.

It is known in the art that specific gravity is a measure of relative density (mass per unit volume) of a material and bending modulus is a measure of stiffness of a material. Both features may be manipulated by controlling the composition of a composite material. Increased specific gravity would increase the weight of a given volume of compound

material, while decreased density would decrease the weight of a given volume of the compound material. Optimization of specific density in a swinging arm is necessary to determine the preferred weight to achieve a desired velocity in conjunction with the motor of a specific power. The velocity of the swinging arm determines the oscillation frequency and therefore impacts the final pattern of elastic placed by the arm. Consequently, it is known in the art that specific gravity is a result effective variable of a swinging arm.

Increased bending modulus creates a stiffer swinging arm, which results in a smaller radial motion during oscillation. Decreased bending modulus creates a flexible swinging arm, which results in a greater radial motion during oscillation. Optimization of bending modulus in a swinging arm is necessary to discover the preferred stiffness of the arm during oscillations of the arm at an operating speed, and impacts the amplitude and shape of deposited filament. Consequently, it is known in the art that bending modulus is a result effective variable of a swinging arm.

The dependency of claims 16-18 on independent claim 1 is noted and the rejection corrected to reflect the dependency of these claims.

The individual arguments against dependent claims 17-18 is addressed below in the second grounds of rejection, reflecting the new grounds of rejection.

It is known in the art that weight of a composite article may be manipulated by controlling the composition of a composite material. Increased weight would increase the force required to rotate the swinging arm, while decreased weight would decrease the force required to rotate the swinging arm. Optimization of weight in a swinging arm

is necessary to achieve a desired velocity in conjunction with the motor of a specific power. The velocity of the swinging arm determines the oscillation frequency and therefore impacts the final pattern of elastic placed by the arm. Consequently, it is known in the art that weight is a result effective variable of a swinging arm.

In response to applicant's argument that there is no suggestion to combine the references of Syndikus and Blenke, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation is found in the knowledge generally available to one of ordinary skill in the art. It is not necessary that the prior art suggest expressly or in so many words the changes or possible improvements the inventor made but that the knowledge be clearly present. *In re Sernaker*, 217 USPQ 1 (Fed. Cir. 1983). One of ordinary skill in the art would recognize the directly attached arm of Syndikus is directly connected to the motor, and therefore more responsive to changes in direction and velocity versus the indirectly attached arm of Blenke. This serves as the necessary motivation to obtain the current invention. Furthermore, the simple substitution of one known element (the elongated arm of Syndikus) for another (the oscillating arrangement of Blenke) would achieve the predictable result of providing improved arm control during oscillations.

Second Grounds of Rejection:

As to applicant's argument that Blenke requires perpendicular vertical orientation, rendering a combination with the arrangement of Herrmann improper, examiner disagrees. Applicant cites column 8, lines 36-41 and 50-55 as requiring a vertical arm orientation. However, these passages only recite a perpendicular orientation to the curvilinear paths, not a vertical arrangement. Nothing in the cited passages teaches away from a horizontal arrangement, as argued by applicant. To the contrary, a combination with the horizontal arrangement of Herrmann would result in arms 44/46 arranged perpendicularly to the curvilinear paths 26/28 upon entry into the compression nip, and therefore meets the preference of Blenke requiring a perpendicular arrangement. Consequently, such a combination would not defeat the intended purpose of Blenke as argues by applicant.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to combine is found in the references themselves. Hermann's disclosure of a different arrangement of parts could easily be combined with the disclosure of Blenke to allow for increased process speeds (column 1, lines 29-31). This disclosure by Herrmann serves as the motivation to make such a combination, and provides a rationale as to why one

of ordinary skill in the art would consider such a modification preferable. While the arrangement of Hermann is different than the device of Blenke, it is this teaching of a new arrangement which is relied upon to suggest obviousness. Such a modification would not alter the operation of the device, only the orientation of its components. Consequently, the orientation of the parts is not considered to significantly alter the operation of a device. Also, it is generally held that rearrangement of parts that does not otherwise modify the operation of the device is found to be obvious (In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950)).

Regarding the claimed feature of maximum angular acceleration of 15,000 rad/sec² recited in independent claim 1, examiner notes this feature is recited as a maximum acceleration. Consequently, even while stationary, the device of Blenke reads on the claim language. Also, examiner completely agrees with applicant's statement that it would be obvious to operate a sports car at its maximum speed. Such a rationale relies on the desire to use equipment in a device at its maximum capability to provide the most efficient and cost-effective production environment. Cordeiro is relied upon to teach 15,000 rad/sec² is known in the art as an operating capability of servomotors, and therefore it would have been obvious to use such an acceleration with the servomotor in the device of Blenke to achieve a maximum productivity. As a result, this argument is not persuasive.

In response to applicant's arguments against the rejection of claims 7 and 12, see above regarding the rearrangement of Blenke as taught by Herrmann. Also, examiner

notes a deviation angle of 0 as taught by Herrmann would read upon the claimed range of "a deviation angle of 10º or less".

As to applicant's arguments regarding the rejections of claims 12, 14, and 23, as being improper, because claims 12, 14, and 23 depend from claim 15, examiner disagrees. Note claims 12, 14, and 23 were rejected under the same grounds as independent claim 15 and further in view of U.S. Patent No. 5,660,664 to Herrmann. Consequently, these claims are rejected as being dependent on independent claim 15.

In response to applicant's arguments regarding claim 17, examiner notes the column 9, line 56-column 10, line 5 of Blenke disclose intermittently applying adhesive to the elastic strands. The intermittent application of adhesive requires that some portions of the elastic strands are not attached to the web, contrary to applicant's assertion that the entire elements of Blenke are attached to the article. Therefore, this argument is not persuasive.

With respect to applicant's arguments regarding claim 18, it is noted that the stretch ratio of an elastic member is controlled by how far it is stretched. It is inherent that elastic members arrayed in different, independent patterns would undergo different stretch ratios. Blenke's disclosure of providing elastic members in independent curvilinear paths would result in these elastic members having a different stretching ratio based on the separate paths of the elastic members. Consequently this argument is not persuasive.

As to applicant's arguments regarding claim 23, these arguments are not persuasive. It is known in the art that weight of a composite article may be manipulated by controlling

the composition of a composite material. Increased weight would increase the force required to rotate the swinging arm, while decreased weight would decrease the force required to rotate the swinging arm. Optimization of weight in a swinging arm is necessary to achieve a desired velocity in conjunction with the motor of a specific power. The velocity of the swinging arm determines the oscillation frequency and therefore impacts the final pattern of elastic placed by the arm. Consequently, it is known in the art that weight is a result effective variable of a swinging arm.

Third, Fourth, Fifth and Sixth Grounds of Rejection:

The arguments in these sections are either the same as those previously addressed, or based on the dependency of claims 2-3, 6-7, 9-10, 12-14, 16-19, 22-23, and 25-27 independent claims 1 and 15. These arguments are not persuasive for the reasons noted above.

Seventh Grounds of Rejection:

In response to applicant's argument regarding claim 25, this argument is not persuasive. Syndikus' disclosure of stationary axes of the press rolls relative to the rotary shaft when combined with Blenke does not eliminate the sliding capability of the arm of Blenke. Instead, substituting the directly connected arm of Syndikus for the pivoting means of Blenke would result in arm 42/44 directly connected to the rotary shaft of the servomotor (82) such that the rotary shaft is stationary relative to the axes of the press rolls, similar to the drawings in Syndikus in Figures 1 and 2. The described combination does not eliminate a sliding capability of Blenke, and improves control of the thread guide means by providing a direct connection between driving means (82)

and thread guide means (42/44), and therefore would result in improved control during oscillations.

Eighth, Ninth, and Tenth Grounds of Rejection:

The arguments in these sections are either the same as those previously addressed, or based on the dependency of claims 2-3, 6-7, 9-10, 12-14, 16-19, 22-23, and 25-27 independent claims 1 and 15. These arguments are not persuasive for the reasons noted above.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

This examiner's answer contains a new ground of rejection set forth in section **(9)** above. Accordingly, appellant must within **TWO MONTHS** from the date of this answer exercise one of the following two options to avoid *sua sponte* **dismissal of the appeal** as to the claims subject to the new ground of rejection:

(1) **Reopen prosecution.** Request that prosecution be reopened before the primary examiner by filing a reply under 37 CFR 1.111 with or without amendment, affidavit or other evidence. Any amendment, affidavit or other evidence must be relevant to the new grounds of rejection. A request that complies with 37 CFR

41.39(b)(1) will be entered and considered. Any request that prosecution be reopened will be treated as a request to withdraw the appeal.

(2) **Maintain appeal.** Request that the appeal be maintained by filing a reply brief as set forth in 37 CFR 41.41. Such a reply brief must address each new ground of rejection as set forth in 37 CFR 41.37(c)(1)(vii) and should be in compliance with the other requirements of 37 CFR 41.37(c). If a reply brief filed pursuant to 37 CFR 41.39(b)(2) is accompanied by any amendment, affidavit or other evidence, it shall be treated as a request that prosecution be reopened before the primary examiner under 37 CFR 41.39(b)(1).

Extensions of time under 37 CFR 1.136(a) are not applicable to the TWO MONTH time period set forth above. See 37 CFR 1.136(b) for extensions of time to reply for patent applications and 37 CFR 1.550(c) for extensions of time to reply for ex parte reexamination proceedings.

Respectfully submitted,

/Kimberly K McClelland/

Examiner, Art Unit 1791

Conferees:

/Philip C Tucker/

Supervisory Patent Examiner, Art Unit 1791

/Jennifer Michener/

QAS, TC1700